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26 February 1985

Worldwide Report

TELECOMMUNICATIONS POLICY,
RESEARCH AND DEVELOPMENT

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WORLDWIDE REPORT

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

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JAPAN

BRIEFS

NTT UNVEILS SATELLITE COMMUNICATIONS EQUIPMENT--Tokyo, 1 Feb (KYODO)--The Nippon Telegraph and Telephone Public Corp (NTT) Friday unveiled a prototype of communications equipment to be mounted in its next generation communications satellite "CS 3." The equipment, expected to serve as the "core" of the satellite, has its transponders, mainly of 20-30 gigahertz, arranged in a circular format. NTT officials said the new equipment is 98 percent domestically produced, except for certain technically-demanding special transistors and relays. The equipment, developed by NTT's Yokosuka Laboratory in Kanagawa Prefecture and manufactured by NEC Corp, will be tested at two different research centers, the officials said. The first CS 3 will be launched in February 1988 and its improved antenna will widen communication coverage to include Okinawa, they said. [Text] [Tokyo KYODO in English 1222 GMT 1 Feb 85 OW]

CSO: 5500/4510

PEOPLE'S REPUBLIC OF CHINA

CHINA'S LARGEST 4380 CHANNEL CARRIER WAVE SYSTEM DEVELOPED

Beijing DIANXIN JISHU [TELECOMMUNICATION TECHNOLOGY] in Chinese No 2,
1984 p 6

[Article by Xu Dashen [1776 6671 3932]: "China's Largest Capacity 4380
Channel Carrier Wave System Successfully Developed"]

[Text] A key national technical development project - the 4380 channel
coaxial cable carrier wave system has been successfully developed and
certified.

The is the highest capacity carrier wave communication system in China.
It is capable of handling 4,380 telephone lines on two 2.6/9.5 mm coaxial
cables simultaneously. In addition, it can handle non-telephone business
such as telegram, facsimile, radio broadcasting and data transmission.

This system employs modern techniques such as prognostic balance, pro-
gnostic adjustment, automatic reverse, automatic monitoring (automatic
display and printing) and far-end serial input. The entire system has
been thoroughly tested for heat and flood, and proved to perform well.
The circuit is stable. This system can be incorporated in new constructions
and also used in existing coaxial cables through expansion.

The economic benefit of this system is obvious. The engineering cost
for modification per kilometer is only approximately 30 percent of that
of a newly constructed 1800 channel carrier wave system. The con-
struction work is only about 20 percent. The construction cost for the
newly developed buried semi-vertical unattended repeating station is only
approximately 10 percent of that of the original unattended repeating
station.

The system has been certified and transferred to the communication
industry for use.

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PEOPLE'S REPUBLIC OF CHINA

MULTI-CHANNEL TELEVISION, TELEPHONE OPTICAL FIBER COMMUNICATION EQUIPMENT

Beijing TONGXIN HUEBAO [JOURNAL OF CHINA INSTITUTE OF COMMUNICATIONS] in Chinese No 3, July 1984 p 112

[Article by Wu Yizun [0702 1744 1415], Yuan Baishan [5913 4101 1472] and Duan Bingyi [3008 3521 3015] of Beijing Institute of Posts and Telecommunications: "Multi-channel Telephone and Television Optical Fiber Communication Equipment Using 70 MHz FM Carrier Wave"]

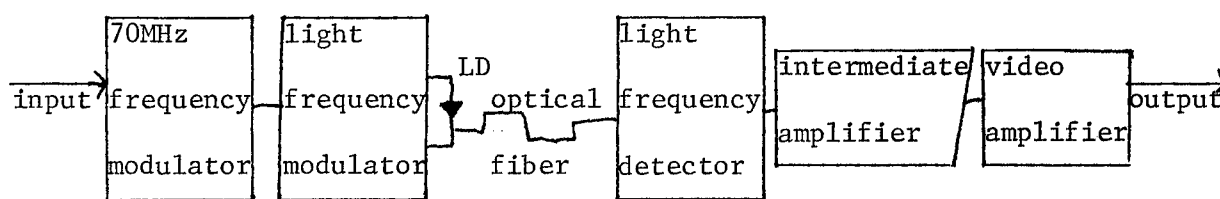
[Text] There is a large number of analog telephone and television transmission equipment in China. If such equipment can be used in short- and medium-range communications with optical fiber, then optical fiber communications can be more rapidly promoted to obtain the economic benefit. The transmission of television pictures has been analyzed before (see "Study of Multi-channel Optical Fiber Television Signal Modulation" by Wu Yizun in DIANZI XINXI JISHU [ELECTRONIC INFORMATION TECHNOLOGY] Volume 2, 1982). In short-range telephone and television transmission systems (such as subway) and median- and short-range optical fiber systems, it is also favorable to use an analog system based on the availability of devices and optical fiber. The equipment introduced in this work can also explain this possibility.

This FM optical fiber multi-channel telephone and television equipment is capable of transmitting 300 telephone lines or one color television channel. When the attenuation of the optical fiber is 3-5 dB/km and the bandwidth is 250-300 MHz km, the transmission range can reach 7-10 km. Furthermore, it can be conveniently connected to microwave relay circuits.

Because of the linearity problem in direct LED modulation, a subcarrier frequency modulation system was used in this equipment. An LD tube could be used as the power source for a larger output power. Because the primary microwave relay system in China is modulated at an intermediate frequency of 70 MHz. Thus, the entire microwave intermediate frequency could be utilized directly. Furthermore, the microwave relay system could be naturally connected to the optical fiber transmission system. If required (such as near large cities), it could be directly switched from microwave intermediate frequency transmission to 70 MHz subcarrier frequency optical fiber transmission (not modulated). The

quality could still be assured after many connections. In addition, it is also easy to add three television channels at 50 MHz and 30 MHz subcarrier frequencies. It was experimentally proved that once the signal to noise ratio at 70 MHz is satisfied these subcarrier frequency indicators could be easily met (refer to H.B. Kin and Corrand "Along Wavelength LED Based Multi-channel Video Transmission System Using FM," 1980 European Optical Communication Symposium).

The block diagram of this equipment is shown below. Every modulating, intermediate amplifying and video amplifying component was designed based on the similar component on the microwave equipment. The input LD optical power is approximately 1mW.



The testing indices of the system are shown in the following table (see the technical certificate issued by Beijing Institute of Posts and Telecommunications, 70 MHz Optical Fiber Videophone Equipment, May 1983). They were obtained by using video testing instruments as well as microwave testing instruments for comparison.

DG	DP	$\Delta \tau$	ΔK	S/N	non linear distortion
1%	1.5°	+5ns	0.3dB	49dB (20dB unweighted attenuation)	1.5%

From the test results shown above, one can see that the signal to noise ratio of this equipment will maintain at above 50 dB when the attenuation of the optical fiber is about 35 dB because of the advantage of frequency modulation as well as the LD and APD tubes used. These indices can meet the international standards for 300 telephone lines or a color television channel. If it is not demodulated and switched directly at 70 MHz, the effect of non-linear distortion of DG and DP is very small. Therefore, as long as the signal to noise ratio can be assured, the international standard can still be met after several connections.

We would like to acknowledge that the measurements were made with the assistance of Comrade Zhao Peiwen [6392 1014 2429] of Beijing Institute of Posts and Telecommunications and Comrades at Institute of Transmission of the Ministry of Posts and Telecommunications.

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PEOPLE'S REPUBLIC OF CHINA

GROWTH OF POSTS, TELECOMMUNICATIONS IN YUNNAN DISCUSSED

Kunming YUNNAN RIBAO in Chinese 28 Sep 84 p 2

[Article by Zhao Ligong [6392 4539 0501] and Zhang Zonglin [1728 1350 7207]: "Rapid Development of Post and Telecommunications in Yunnan - Number of Posts and Telecommunications Offices Increased By 1.8 Times, Total Route By 9.7 Times"]

[Text] The posts and telecommunications business has grown rapidly in Yunnan and has already become a multi-technology, multi-business communications network capable of reaching everywhere.

In the past 35 years, the number of posts and telecommunications offices increased by a factor of 1.8 as compared to 1949. The total route covered increased by 9.7 times, in which the postal route served by motor vehicles increased by 22.4 times. Service installations of posts and telecommunications are established in all the cities and villages in Yunnan. One quarter of the counties in Yunnan can receive YUNNAN RIBAO on the day it is published. Electronic communications is developing even more rapidly. Compared to 1949, long distance lines in Yunnan has increased by 22.9 times, long distance telephone lines increased by 42.4 times and telegraphic lines increased by 9.5 times as of 1983. The capacity of the telephone exchange has increased by 160 times.

Before China was liberated, communications technology in Yunnan was very outdated. Mail was basically carried by people on horseback. All the internal operation was handled manually. Presently, airplanes, trains and vehicles are used for major postal routes above the county level. The postal routes within the county are generally covered by motorcycles and bicycles. A few post offices begin to use loading machines, parcel sorters and vacuum equipment for internal processes. Since 1971, 600 microwave channels can go straight to Beijing. Television, radio, radio-photo and telephone can be rapidly transmitted from the capital to Kunming. Telegram and telephone can be used to send information to the vast number of users in a timely manner through the multi-channel carrier wave covering every corner in Yunnan. Automatic telephone exchanges are available in 31 counties, cities and localities in the province.

The posts and telecommunications industry in Yunnan also grows to a certain scale. In recent years, this industry combines scientific research with production to continuously develop new products. A number of domestically well-known products have been developed. The rural loop carrier and city telephone loop carrier have been used in 28 provinces, cities and autonomous regions in China. Production cannot catch up demand. The urban telephone user concentrator, long range user concentrator, high frequency loop carrier and 32 horse power four-wheel motorcycle received users' welcome when they were first introduced. In the past 5 years, nine accomplishments received technical achievement awards from the province. Five of them are the first successful attempts in China. They are contributing towards the modernization of posts and telecommunications in Yunnan.

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PEOPLE'S REPUBLIC OF CHINA

BEIJING'S INTERNATIONAL TELECOMMUNICATIONS BUREAU

Shanghai XIANDAI TONGXIN [COMMUNICATIONS TODAY] in Chinese No 9, 1984
p 1

[Article by Song Kui [1345 7608]: "Beijing International Telecommunications Bureau Under Construction"]

[Text] On 2 December 1983, work began on the Beijing International Telecommunications Bureau (ITB), a national priority project, and intensive construction is now under way. The total area of the buildings when completed will be 22,000 square meters. It will be located at the intersection of Jichang and Dongsanhuan Roads--by the Liuwang Temple and bank of the Lijiao Bridge, in an area with a high concentration of businesses which use international telecommunications.

The main structure of the ITB will cover an area of 13,467 square meters, and will be of a type which will satisfy the height requirements for microwave antennas. It will employ the high-rise style, and will be of the frame-shear stress wall type. The building's plane will be 42.7 X 23.2 meters, composed of 21.6 X 7.5 meter columns in a network. Thirteen stories of the structure will be above ground, with a total height of 83.3 meters to the antenna platform. There will be three stories below the ground, with the lowest being a box-shaped foundation story, the middle one the building's basement level, and the top one of the three stories the equipment level, with an underground depth of 10.2 meters. For the style of the building, see the accompanying photograph of the model. Installed in the building's interior will be an international telephone automated exchange and international consumer telegraph automated exchange (Telex), along with such appropriate compatible telecommunications equipment as microwave, carrier wave telephone and telegraph, PCM, etc. This will be China's principle international telephone and telegraph outlet, the hub of its international telecommunications.

In general, the overall arrangement of the main building will be as follows: below the first floor will be rooms for housing such equipment as the hydraulic generator, water pump, electric power transformer, high and low voltage power distributor, cable wire supply and switching

distribution, air conditioning units, fire fighting monitoring and control system, internal telephone exchange, etc. Above the second floor will be the international telephone semi-automated platform room, Telex room, telecommunications power supply room, as well as microwave, carrier wave and other telecommunications equipment rooms. The 13th floor open porch section and the antenna platform at the top of the building can both support a microwave antenna.

To meet the environmental requirements of modern telecommunications equipment, the construction will include such essential features as dust-proofing, temperature and humidity control and precautions against natural disaster.

In the telecommunications network organization, the ITB will link up internationally with digital and analog microwave relays separate from the Northwest area satellite ground station; this will enable these ground stations to distinguish between the international communications satellite passing over the Indian Ocean and satellites over the Pacific Ocean when entering the worldwide telecommunications network. Domestically, it will also link up digital microwave and analog carrier wave relay circuits with a large number of telephone and telegraph installations in the western areas, entering these by means of coaxial cable, cable carrier wave and microwave main line; this will be the principle means of transmission in our national telecommunications network. It will go from this city to a cable relay within the city and by means of PCM be relayed to the telephone bureau of every city and region and then to consumers; by these means it will carry out exchange service for international telephone and consumer telegraph for this city and every other locality in the nation.

Installed in the ITB's international telephone section will be an advanced digital programmable electronic switcher. When first installed it will be capable of placing 400 international telephone circuits and more than 800 trunk lines in Beijing and the nation, a capacity of approximately 1,200 lines. The eventual capacity may be as much as 2,000 international telephone circuits, plus an increased number of local and national trunk lines, for a capacity of about 6,000 lines. Once this equipment is in full operation, telephone users with access to this city's telephone exchange will be able to automatically dial any place in the world; by an easy and step-by-step system, consumers in this municipal exchange can also call up any location in the world by going through telephone operators at the ITB, effecting a semi-automatic connection. Any city in China which is equipped with programmable electronic switching equipment can also go through this exchange to dial up any place in the world. In addition to such important functions as automatic direct dialing and calculation of costs, the consumer will also be offered many new services, such as abbreviated dialing, call transfer, third-party calls, conference calling, immediate notification of telephone charges and much more. Part of the equipment is a telephone operator system, so in practice it is an intelligent terminal installation. The system sits atop a free-standing visual display unit, or VDU, and functions so

that some calls are put through with operator assistance. These include such semi-automated connections as person-to-person, collect, third-party, credit card and other manually placed calls, conference calls, etc. This system will replace the traditional telephone bill, by totally calculating expenditure information and recording it in the computer memory. Many operations in the past required the manual control of a telephone operator, for example calling, queuing and calculation of charges; with this system it is only necessary to input these bits of information on the keyboard, and the computer will automatically process them, and at a much higher rate of efficiency than the telephone operator. Besides providing telephone services, this digital switching equipment can, by deploying the necessary interface modules, also receive and transmit such non-telephonic services as facsimile and data, thereby creating the conditions for a transition from a unitary telephone exchange net to a comprehensive digital communications net.

The Telex equipment installed in the ITB will also be a programmed time-division electronic exchange. Its chief mission will be to serve as China's principle outlet for international consumer telegrams, while concurrently serving the eastern half of the city of Beijing as a consumer telegraph tandem exchange. It will have a capacity of 3,000 lines, capable of handling more than 1,000 foreign and domestic circuits and between 1,000 and 2,000 local users. The eventual capacity will be 12,000 lines, that is, about 4,000 foreign and domestic telegraph circuits and 8,000 consumers. This type of Telex has the ability to put consumers in Beijing and other cities in the surrounding province which are equipped with 50 baud electronic transmitters in contact with telegraph users anywhere in the world; in addition, it can offer these consumers more than 20 services, for example direct connection dialing (hot line), brief number option (abbreviated dialing), call waiting, multiple-address calling, conference calling and memory transmission, etc. After deploying the necessary interface and wide band telegraph circuit relay lines, it will also be possible to send and receive data services at various speeds and numerical patterns.

At the same time that the ITB is importing the digital switcher, in the area of transmission equipment it has also selected a definite quantity of digital microwave, PCM and telegraph time division multiplexers (TDM), and other digital equipment. This is being done in order to maximize the advantages of the digital switcher, and to move forward in making the transition from an analog communications net to a digital communications net.

With support from various quarters, the ITB project is right now in a stage of intense construction. Construction is moving along fairly rapidly: according to plan, ground construction will be completed in 1985, and the building will be operative sometime in the first half of 1987. When it is built, the ITB will greatly alleviate the capital's tense international communications situation, join the Chinese people with the other peoples of the world in friendly contact, and promote the development of foreign trade and tourism, bringing its vital usefulness into full play.

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PEOPLE'S REPUBLIC OF CHINA

BRIEFS

FOSHAN-ZHONGSHAN MICROWAVE LINK--The 960-line microwave communication link between Foshan and Zhongshan, whose capacity is second only to the province's largest microwave communication line between Guangzhou and Hong Kong, was formally put through today after passing examination due to its good quality. This is the province's first large-capacity microwave communication link built by the posts and telecommunications department in the Zhujiang Delta. Starting at Foshan and passing through Shunde before ending at Zhongshan, this communication link can join with and become part of the newly opened microwave communication network among Foshan, Guangzhou, Shenzhen, Zhuhai, and Hong Kong. Therefore, the communication links in the Zhujiang Delta area has been jointed up, as well as greatly improved. From start to completion, the Foshan-Zhongshan microwave communication project only required 3-odd months' time for construction. Its construction speed was so rapid that it has set a record in the history of the province's postal and telecommunication construction. [Text] [Guangzhou Guangdong Provincial Service in Mandarin 0400 GMT 31 Jan 85 HK]

POST, TELECOMMUNICATION GOALS OVERFULFILLED--Beijing, 16 Jan (XINHUA)--During this afternoon's telephone conference of various post and telecommunication departments, Zhu Gaofeng, vice minister of posts and telecommunications, said: The major goals of post and telecommunication business for 1985 set by the "Sixth 5-Year Plan" were already overfulfilled last year. In 1984, China's total business volume of post and telecommunication services was 2.49 billion yuan, a 6.5-percent increase over the goal set by the 5-year plan. Zhu Gaofeng also mentioned other developments in the field of posts and telecommunications. Basic construction work for telecommunication services has been accelerated, and the quality of such services much improved. The capabilities in providing telecommunication services have been further strengthened. Boxes for letters and newspapers have been installed at 130,000 buildings of two or more stories in China. The various post and telecommunication departments have continued to raise their efficiency and have accelerated the pace of their consolidation. However, due to the increasing needs in post and telecommunication services in society, demands for post and telecommunication services remain high in the country. Zhu Gaofeng called on all post and telecommunication workers in China to create a new situation in carrying out their work in the new year. [Excerpts] [Beijing XINHUA Domestic Service in Chinese 1415 GMT 16 Jan 85 OW]

GUANGDONG'S ZHUHAI TELECOMMUNICATIONS--The Guangdong Provincial Post and Telecommunications Bureau will import about 2,000 portable automatic telephone switchboards from Canada. These switchboards will be installed at the (Gongbei) Post and Telecommunications Office, Zhuhai city. [Summary] [Guangzhou Guangdong Provincial Service in Mandarin 1000 GMT 28 Jan 85 HK]

BEIJING MAYOR ON TELECOMMUNICATIONS--According to a RENMIN YOU DIAN BAO 27 January report, Beijing Mayor Chen Xitong recently pointed out the need to enlarge the scope of the telecommunications construction project of the Chinese capital and to speed up the project. He said that Beijing municipality would supply additional funds if needed so that 60,000 new telephones could be installed in the municipality by the end of this year. He hoped that Beijing would have at least 600,000 telephones or more by 1990. An agreement has been reached between Beijing municipality and the Ministry of Posts and Telecommunications on establishing a leading group in charge of telecommunications construction in the capital. [Text] [Beijing Domestic Service in Mandarin 2230 GMT 26 Jan 85 OW]

HEILONGJIANG TELEPHONE CONSTRUCTION--The Heilongjiang Provincial Postal and Telecommunications Administrative Bureau plans to attend to telephone installation in large and medium-sized cities during the Seventh 5-Year Plan period. The number of telephone lines in the province will increase from 150,000 to 310,000. Of this, the number of telephone lines will be under a program control system. The number of long-distance telephone lines in the province will increase from 1,500 to 2,000. By 1990, over 20 cities and counties in the province will be covered by the nation's direct-dial networks. [Summary] [Harbin Heilongjiang Provincial Service in Mandarin 2200 GMT 26 Jan 85 SK]

GUANGDONG MICROWAVE COMMUNICATIONS--The provincial radio and television department recently held a conference in Huizhou on the work of microwave lines in eastern Guangdong. The conference studied the problem of expanding the capacity of the Guangzhou-Shantou microwave lines, calling for more efforts to transmit one more color television program from Guangzhou to Shantou by around May 1985 and increase lines for transmitting programs to Guangzhou from Shantou. [Summary] [Guangzhou Guangdong Provincial Service in Mandarin 0400 GMT 25 Jan 85 HK]

BEIJING TELEPHONE BUILDING--Beijing, 10 Jan (XINHUA)--The main building of Beijing's Dongdan telephone bureau, a key state project, was recently completed ahead of schedule. The bureau plans to install 10,000 telephones first and gradually increase the number to 40,000. It is currently China's largest city telephone bureau. [Excerpts] [Beijing XINHUA Domestic Service in Chinese 10 Jan 85 OW]

OPTICAL FIBER TECHNOLOGY--Nanjing, 6 Jan (XINHUA)--The Nanjing Posts and Telecommunications Institute has successfully used a new technique in transmitting color TV programs by replacing electric cables with optical fibers, which are thinner than human hair. The new technology recently passed evaluation in Nanjing. The optical fibers are made from quartz glass, which effectively prevents magnetic force from interfering with circuits and thus offers greater fidelity in audio and video reception. [Summary] [Beijing XINHUA Domestic Service in Chinese 0037 GMT 6 Jan 85 OW]

XIZANG GROUND STATION--Lhasa, January 30 (XINHUA)--People in Tibet have bought 9,400 color and 5,000 black and white television sets since color programs became available locally in October 1979, according to a local official. "Color sets with 18 to 20 inch screens were sold out a few hours after they came into the department store," a shop assistant in Lhasa, capital city of the autonomous region, told XINHUA's reporter. A satellite ground station on the northern outskirts of Lhasa went into service on October 1, 1984. Programs it receives from Beijing are relayed to settlements on the "roof of the world" through 25 local stations. The Tibet TV station, which went into operation on May 1, 1978, not only relays programs from other parts of China but can also dub TV films into the Tibetan language. The staff has now begun producing their own TV films. [Text] [Beijing XINHUA in English 1224 GMT 30 Jan 85 OW]

TELECOMMUNICATIONS COOPERATION WITH SPAIN--Beijing, January 26 (XINHUA)--China and Spain may conduct telecommunication cooperation in forms of technical exchange, joint scientific research and joint production, according to a memorandum of understanding signed here today between Chinese Ministry of Posts and Telecommunications and the Spanish National Telephone Company here today. The memorandum held that there existed possibilities for the two countries to cooperate in the fields of equipment for rural telecommunication, optical fibre communications techniques, stored programme control exchange of small capacity, data package switching equipment and multi-function telephone sets. Chinese Vice-Minister of Posts and Telecommunications Zhu Gaofeng and chairman of the board of the Spanish National Telephone Company Luis Solana signed the memorandum. Before the signing, Yang Taifang, Chinese minister of posts and telecommunications, met a delegation from the Spanish National Telephone Company led by Solana. Spanish Ambassador to China Mariano Ucelay de Montero was present on both occasions. Yesterday, the delegation also signed a letter of intent with China International Trust and Investment Corporation on which China would import equipment of radio telephone from the Spanish company. [Text] [Beijing XINHUA in English 0858 GMT 26 Jan 85 OW]

CSO: 5500/4186

THAILAND

EX-MINISTER URGES COMMUNICATIONS SATELLITE DEVELOPMENT

Bangkok NAE0 NA in Thai 9 Sep 84 p 15

[Article: "Thailand Should Have Its Own Satellite"]

[Text] The former director-general of the Posts and Telegraph Department thinks that Thailand should have its own satellite. He recommends that a decision be made and that action be taken now since it would take at least 6 years to complete this.

During a lecture entitled "Should Thailand Have Its Own Satellite For Domestic Communications Activities?" which was held on 8 September at the Asia Hotel, in his capacity as the president of the Electronics Association of Thailand, Police Maj Gen Suchat Phuaksakon, the former director-general of the Posts and Telegraph Department, voiced his support for this idea. He recommended that preparations be made with respect to personnel, money and domestic technological development. The International Telecommunications Union should be contacted as soon as possible since the discussions on using an artificial satellite will take 3 years. If the government has made a decision, things should get underway now since it will take at least 6 years before a satellite becomes a reality.

The president of the Electronics Association of Thailand said that if Thailand wants to have its own satellite, it must establish a special unit since this requires the use of space and telecommunications technology. Thailand's present telecommunications units, including the Communications Authority of Thailand and the Telephone Organization of Thailand, lack the expertise and technology to carry on this work.

Thailand will have to have a satellite someday since this will give us the right to control the satellite. At present, Thailand uses two satellites for telecommunications activities. These two are the Intelsat satellite of the International Telecommunications Union and the Palapa satellite of Indonesia. Thailand would be affected if these two satellites experienced problems.

As for the cost of having our own satellite, Police Maj Gen Suchat said that if it is a 24-transponder type satellite, it will cost 6 billion baht. This can be used for approximately 10 years. It will also cost approximately 990 million baht a year to operate. These costs are based on current prices.

A communications satellite costs so much because three satellites are required each time. The first two satellites are put into orbit in space, with one of these serving as a backup satellite. The third one is kept on the ground in reserve. However, there are also other expenses such as the cost of building a satellite control center. As for the cost of renting the Intelsat satellite, Thailand currently pays approximately 23-46 million baht per transponder. If the government decides to have its own satellite, it will have to study satellite models and the expenses involved in order to determine whether having a satellite is worth the cost. Also, it must contact the International Telecommunications Union since it manages the positions of satellites, which have been stipulated.

11943

CSO: 5500/4316

THAILAND

COMMUNICATIONS SATELLITE NEEDS EXAMINED

Bangkok SIAM RAT in Thai 26 Sep 84 p 3

[Article by Supharat: "A Thai Communications Satellite: A Chance to Prove [the Sincerity] of People, too"]

[Text] On Saturday, 8 September, I attended a lecture by Police Maj Gen Suchat Phuaksakon, the president of the Electronics Association of Thailand. This lecture, entitled "Should Thailand Have Its Own Satellite For Domestic Communications Activities?" was held at the Asia Hotel. From the lecture, I learned that:

1. We can use a communications satellite to provide various forms of international and domestic telecommunications services such as telephone, teleprinter, telephotograph, television and radio service. This can be done in a manner that is just as efficient as using a microwave radio and underwater and optical fiber cable system. A communications satellite is also superior in terms of flexibility and speed in putting it into operation with no restrictions on distances, routes or geographical characteristics. A ground radio transmitter-receiver station can be built anywhere radio waves from the satellite can be picked up.
2. Thailand, through the Posts and Telegraph Department, began using a satellite communications system in 1967 by providing international telecommunications services. Domestic telecommunications services were made available in 1979. This began with Color Television Channel 7 broadcasting to the provinces by means of the satellite. Later on, Channel 5 followed suit. Government sectors and state enterprises built at least 40 ground stations throughout the country in order to carry on telecommunications activities using the Intelsat satellite and Indonesia's Palapa satellite.
3. The need for a communications satellite for domestic communications activities is increasing very quickly in both the public and private sectors. Because of the advances made in space and telecommunications technology, the cost of using a communications satellite has declined continually. Interesting communications services that a communications satellite can provide include computer-interfaced data communications

in financial activities. Another activity is television transmission. Home viewers will be able to use their televisions to pick up the TV signals directly from the satellite, and television stations will not have to be built in the localities as at present. By expanding telecommunications services, particularly telephone service, to the remote rural areas, development will proceed at a rapid rate, and it will be possible to give medical and public health advice using a satellite. And it will be possible to provide education via space in the form of an open university such as Sukhothai Thammathirat University. This trend shows that if Thailand has its own satellite in the near future, this will be more economical and suitable than renting a communications satellite from abroad as is now being done. The Posts and Telegraph Department has been collecting data on Thailand having its own communications satellite since 1979. This did not begin just last year with the dream of some politician.

4. The cost of putting a communications satellite into orbit is very great. The cost of a satellite with 24 transponders for providing various services such as television, radio, telephone, teleprinter, telephotograph and data communications services--which includes the cost of having two satellites in space, one backup satellite on the ground and two satellite control stations and the cost of insurance--is approximately 6 billion baht. Each satellite can be used for approximately 10 years. Thus, the government must consider the financial burden this imposes and find sources of investment capital. One method that is commonly used is to mobilize capital from the users of the services and then form a consortium to administer the work. Thailand may invite the private sector to invest, too.

5. There are many steps in putting a communications satellite into orbit. The most difficult aspect is reserving a place in space for Thailand's communications satellite since space is becoming more and more crowded. Thailand must state its intention to the International Telecommunications Union and request a spot at least 3 years in advance of putting the satellite into orbit. Besides this, we must reserve a vehicle to put the satellite into orbit, which could be the space shuttle or a rocket. This requires that money be paid in advance. NASA bases its rates on the length of time before the satellite is put into orbit, starting from 33 months. If payment is made far in advance, the cost of putting the satellite into orbit is cheaper. However, even if a reservation has been made, if the U.S. government or NASA needs to use the space shuttle for some important task at that time, customers have to wait.

6. If the government decides to put a communications satellite into orbit, it must quickly carry out the following tasks:

It must file a request with the International Telecommunications Union to reserve a position in space for Thailand's communications satellite. But this cannot be done simply by asking to reserve a position; there must be a definite program.

It must quickly find a way to obtain several billion baht to invest in this.

It must establish a unit to take direct responsibility for this since this requires the use of special space and telecommunications technology.

Based on the lecture given by Police Maj Gen Suchat Phuaksakon, the interviews given by Mr Samak Sunthonwet, the minister of communications, and several other lectures, it seems that Thailand does need to have its own communications satellite. But there are some differences:

The Posts and Telegraph Department, or Mr Samak, took the initiative on this. But this does not seem to be very important. Is this just a politician's way of gaining votes?

In his lecture, Police Maj Gen Suchat Phuaksakon said that it would be at least 1987 before Thailand could have its own satellite. It has been almost a year since Mr Samak gave his interview, but it was only recently that he signed a memorandum agreeing to have the Hughes Aircraft Corporation make a feasibility study. Thus, it will certainly be more than 3 years before this becomes a reality. The matter of asking NASA to put a satellite into orbit for us ahead of others does not seem very important when compared with the other steps outlined by Police Maj Gen Suchat Phuaksakon, the former director-general of the Posts and Telegraph Department who has headed several groups of MPs at meetings with the International Telecommunications Union. If Mr Samak can do this, that would be fine, and he would have to be congratulated. This would show that he is suited to becoming the minister of foreign affairs in the "Prem 5" government.

The cost of putting a satellite into orbit is approximately 6 billion baht, and Thailand would have to pay this money to NASA in advance. There is also the cost of building the satellite. But it can be said that Thailand does not have any money for this project and so how can we negotiate with anyone?

To date, there have not been any reports that the Ministry of Communications has put the Office of the Under Secretary of State, the Posts and Telegraph Department, the Telephone Organization of Thailand or the Communications Authority of Thailand in charge of this work. It seems that the only unit responsible for this is the Office of the Secretary to the minister of communications. If this is true, it is praiseworthy that a unit with only a few people can carry on important projects, including bus, airport and satellite projects, worth billions of baht. Thus, there should not be any problem or outcry if the minister transfers an official from the Department of Highways and makes him the director-general of the Meteorological Department. When the boss can do anything, subordinates have to obey, and they have to be prepared to do anything.

I do not know how this will turn out. But if this does benefit the country and future generations, I can only say "amen." And this will redound to the credit of those who took the initiative and exerted pressure to make this a reality, including those whose secret intention was to benefit politically in the future.

But unfortunately, this will take a long time. It will be several years before we know who is telling the truth and who is lying. My only fear is that by that time, the Thai people will have forgotten who the "dream salesmen" were.

5500/4316

THAILAND

BRIEFS

SATELLITE-COMPUTER INTERFACE--Mr Chumphon Sawatdiyakon, the secretary-general of the National Research Council of Thailand, revealed that next year, the National Research Council of Thailand and the Ministry of Science, Technology and Energy will join with the King Monkut's Institute of Technology, Latkrabang Campus, in putting the data received from the satellites on disk for use with small computers. This will help meet the needs of the private sector, which needs data on particular points, such as Bangkok or neighboring provinces. They will be able to purchase data on the points needed. Mr Chumphon said that producing computer disks of data from satellites will also result in data from satellites being used more widely. Private companies will be able to read and analyze the data stored on the disks. At present, when private companies need data from satellites, besides having to buy satellite photographs from the Research Council, they must also use the computers of the Research Council or hire units that have computers to run the analysis for them. Also, the satellite pictures that the Research Council now has are often not detailed enough. [Text] [Bangkok THAI RAT in Thai 12 Nov 84 pp 3, 2] 11943

CSO: 5400/4316

GERMAN DEMOCRATIC REPUBLIC

COMMENTARY ON START OF SCIENTIFIC DATA TRANSMISSIONS WITH USSR

East Berlin INFORMATIK in German Vol 31 No 6, 1984 pp 1-5, 14

[Text] Shortly after the 35th anniversary of the founding of the GDR, the mass media of our country announced the start of a test run of long-range data transmission in the area of scientific and technical information.

For the jubilee year of our republic the staff of the Central Institute for GDR Information and Documentation had set for itself the task of creating the resources for initiating long-range data transmission, a new advance in the exchange of the most recent scientific and technical information.

In the words of comrade Dr Herbert Weiz, deputy chairman of the Council of Ministers and minister for Science and Technology, on the occasion of starting the test run, this new quality of information dissemination, made possible by information pathways among friends, represents an important step in the use of the most up to date communications technology.

In an interview with the editors of INFORMATIK, Comrade Hans Och, director of the Central Institute for GDR Information and Documentation, listed the following results which are improvements over conventional methods of information dissemination:

--It furthers the availability of high-quality information selection from internationally accessible knowledge for the solution of scientifically and technologically significant tasks (e.g., in the preparation of task definition, in providing information for operating procedure manuals, in determining the state of the art).

--References which are not available in our country, can immediately and directly be called up on a video screen; only hard copies are at present still transmitted in a conventional manner.

--Long-range data transmission has significant influence upon the time factor in communicating reference sources. The nine processing steps, which in the presently available conventional technology require an average delay of 44 working days, can be reduced to 12 working days. In a long-distance inquiry which is processed by the information source itself, the processing time period is reduced to 4 working days.

The presently initiated test run is starting out by testing the access to those data banks of the International Center for Scientific and Technological Information which contain R&D results from the USSR and the other CEMA countries. At present this data bank contains 200,000 items; it grows by 40,000 reports annually.

The use of the data bank of the All-Union Institute of Scientific and Technological Information of the State Committee on Science and Technology [VINITI] for scientific publications from international natural sciences and technical literature, for example, provides access to publications which are accruing at the rate of 1.2 million per year.

Using new methodologies and new technologies requires systematic educational efforts. Qualified researchers who must be proficient not only in the use of computer languages, but also in the internal structure and the information code of the data bank to be accessed, constitute an essential factor in making a successful inquiry.

The test run permits an evaluation of the instrumentation and technology of long-distance data searches and an accumulation of experience concerning the subjective and economic problems concerned.

One of the key factors for increasing the effectiveness of information retrieval is the adaptability of the automated systems of scientific and technological information which permits the user to employ the information resources of scientific and technological information facilities in the various subject areas of the SASWTI [State Automated System for Scientific-Technical Information]. Compatibility is provided by the uniform exchange format for bibliographic document description (GOST 7.14-78) and the uniform system for subject representation according to the "SASWTI classification." Adaptability and finally the standardized technology of information processing are expedited in systems design by observing those criteria which are specified in the methodological documents "Standard Rules for the Planning and Development of Scientific and Technological Information Automated Systems," "Standardized Guide for Design and Development of Automated Scientific and Technological Information Systems" and "Standard Design Solutions for Automated Scientific and Technological Information Systems."

From this point of view, and also for the purpose of practicing economy in the use of available resources, it is important that there be standardization of design criteria for specialized branch systems of automated scientific and technological information, for data and graphic information search systems, and for automated scientific and technological information systems of territorial and professional associations. Standardization of computer programs requires a great deal of effort also. At present, the SASWTI's software contains a great variety of user program packages. To standardize computer programs, recommendations are being prepared in accordance with the requirements for the use of standardized SASWTI computer programs, and the standardized computer programs for document and data systems are being established. The complete set of user program packages is being adapted to

the main tasks of the SASWTI, and the software for specific SASWTI task is being programmed.

Networking information technology has made it possible in the facilities for scientific and technological information to accomplish a transition from autonomous automated systems to a network structure with exact coordination of the tasks of the centers for establishing data bases and their further dissemination to subscriber facilities.

The procedures have been created for the establishment of an integrated, standardized, retrospective data base which is suitable for many types of automated processing and the execution of searches. Thirty-five installations are contributing to the generation of the machine-coded body of data. More than 2 million documents are received by the SASWTI annually, of which about 1 million comes from the VINITI. The participants of the network of automated centers of scientific and technological information have designed a number of converters which permit entering into the information search systems with standardized computer programs document collections of any desired type and profile.

However, the introduction of network technology is faced with a series of difficulties and unsolved problems. For example, network technology for the creation and dissemination of data bases on magnetic tape has not yet led to a major increase in information search systems. The number of institutions which receive finished data bases from the SASWTI inventory is increasing at only a slow pace, and the number of subscribers included in the information dissemination of these institutions is insufficient. The main procedure for the use of these resources is selective data preparation, in which the most recent body of current document accessions is prepared in accordance with permanent subscriber profiles, but which thereafter falls into disuse for all intents and purposes. Automation of information activity is being developed at the government, branch and all-USSR levels, in which local institutions of scientific and technological information are hardly included. In only a few organizations, institutions and enterprises are the information services organized to include user stations with video data display terminals and automated work places containing personal or microcomputers.

Even though the SASWTI has had some success in using telephone or telex lines (the VNTIC [All-Union Center of Scientific-Technical Information] is for example using a hard copy ordering system via the PD 200 telex connection), this is obviously inadequate. The telephone and telex long-distance lines are plagued by such deficiencies as the following: great cost, low interference stability, restrictions in data transmission speeds and in the duration of maintaining a continuous connection, failure due to the line being busy, etc. It must be emphasized that at present the information institutions are unable to depend sufficiently upon the time-share computer centers, the reason being that as a rule those centers do not accommodate the requirements for electronic data processing use for automating scientific information activities. Another important feature in the creation of the SASWTI is a principle of information dissemination in which a user who

accesses the system visualizes the total of the data bases as one overall unit without having to worry exactly where the particular information he needs is coming from. The development level of automated information technology now permits transition to the next step, the creation of a decentralized automated data bank for scientific and technological information. The main objective for this is access to the entire mass of the accumulated retrospective data banks through telecommunications.

At the present time, a number of scientific-technological information centers (VINITI, INION [Institute for Scientific Information on the Social Sciences] and others) offer the remote user access to the retrospective data banks for experimental and work purposes. Access to each of the data banks is gained via a subscriber network of terminals. Certain measures have been taken for a standardized use of terminal facilities and for data exchange procedures through telecommunications.

This approach provides the prerequisites for the creation of a general terminal network of subscribers to the decentralized data bank, which is compatible with every center. The subscriber network of the centers already contains several dozen terminals using telephone lines exclusively. One of the most representative data banks which forms the basis for the decentralized data bank is the centralized data bank system created by the VINITI. This system contains a concentration of the multi-subject inventories from retrospective data bases to published documents. In the first quarter of 1984 the total number of simultaneously accessible documents was 1.5 million. An inventory of that size makes it permissible to talk about a working mode or remote searches rather than a "demonstration" mode.

The subscribers' network for long-range access to VINITI data bases via telephone lines includes 12 leading institutes and scientific centers of the Academy of Sciences of the USSR. Plans for 1984 call for the inclusion of several additional Academy institutes, making a total of 30 institutes of the USSR Academy of Sciences and 5 facilities belonging to other areas. For the Academy network the VINITI created a centralized data bank for the natural sciences and engineering, construction, agriculture and medicine. There are plans for the establishment of a remotely accessible data bank for abstract information. It is planned also that before the end of 1984 the VINITI centralized data bank will become accessible to foreign subscribers to the National Center for Information Exchange with Foreign Systems and Data Banks (VNIIPAS).

In view of the fact that information dissemination is being ever more closely associated with production, there is great demand for data-graphic information among large numbers of engineering activities, designers and developers, as well as by management. However, at present the SASWTI is concentrating more on expanding documentary data bases. As to the data-graphic data bases existing in scientific and technological information areas, the achievements are more modest. Some progress has been made in establishing data bases for chemical compounds in the VINITI; for electronic products in the VNII [All-Union Scientific Research Institute]-Informelektro; for scientific instrument development in the CNIITEI [Central Scientific Research Institute

of Information and Technology]-Priborostroenia and for computer technology in the Cybernetics Institute of the Academy of Sciences of the Ukrainian SSR. There are similar examples for other scientific-technological information centers.

The complexity of solving the problem derives from the fact that a significant portion of data-graphics data bases are established locally in research, planning and development facilities. To expedite their accessibility, principles for making these data bases accessible to SASWTI users must be formulated. One possible option would be to leave the function of generating the data bases with those facilities, but to conduct information dissemination in the appropriate scientific-technological information centers. The establishment of data-graphic data bases is a new area and we do not have much experience with it. We might consider the creation of specialized, problem-oriented services in research institutes, development offices and other facilities which would provide the preparation of high-quality, controlled data-graphic data bases for appropriate scientific subject areas. There are some examples of successful problem-oriented data-graphic data bases available in the Institute for Raw Materials Science in Kiev, the Institute for Chemistry in Novosibirsk and the Institute for High Temperatures in Moscow. To solve the problem of establishing data-graphic data bases and to integrate them into the SASWTI will primarily require participation by the following: the branch facilities of scientific-technological information, the organizations of the National Bureau for Standards Data Information and also the All-Union Information Center for Equipment (VCIO).

Another area which must be addressed are the problems and difficulties occurring in connection with the practical operation of automated information systems. Most national data bases reproduce the traditional information publications in toto. They are of little use under present circumstances. Assembling the material, its repeated reproduction under alternative subject headings--all that was directed at the reader who finds the information of interest to him directly in a professional journal or the Bulletin of Signal Information. An automated system requires a methodology appropriate to other types of information use, e.g., for automatic retrospective search. Wide introduction of automated information systems leads to intensification of information resources and increases the need for primary sources. However, reproduction services and libraries are slow to expand their capabilities of providing originals to publications which are cited by information services.

To improve the supply to users of hard-to-get periodicals and continuous compilations, the VINITI, with cooperation from 46 institutions, initiated a centralized microfiche library containing 3,600 titles. This library is expanded every year. Subscriber notification is effected with the support of special automated address-notification services. A similar system is in use at the GPNTB [State Public Scientific and Technical Library] in the USSR, which provides quick notification of the addresses of document repositories where foreign books and periodicals are available, along with national publications having limited circulation.

An effectiveness study of automated scientific-technological information systems in full-time operation in 1983 indicates that a complex data/information service to users is not yet fully available. More than 30 percent of all automated scientific-technological information systems do not operate to full capacity. The complexity of data/information services is not reliable because not all components of the automated scientific-technological information systems are working at required capacity levels. Selective information dissemination functions in 90 percent of automated systems which are in permanent operation; reproduction of hard copies is available in only 65 percent of automated systems. The areas of retrospective search, microfilming of primary sources and recording of bulk information on magnetic tape are fully active in only half of all automated scientific-technological information systems.

The situation is even more widely differentiated in the mastery of progressive technological operational capabilities in the automated scientific-technological information systems. Thus, for instance, only 63 percent use external data bases on magnetic tape, while long-range access to data bases is effected by only 8 percent of automated systems, and that essentially only at the government level. Thus the question remains open as to whether the use of external data bases on magnetic tape can be considered satisfactory even in those automated systems, if in some of them the production of hard copies is not operational. The operation of information systems is automated in only a few cases: such an operational system is functioning in only 13 percent of automated systems. This state of affairs is intolerable and decisive action will be required to improve it.

The information network of the facilities of the USSR Academy of Sciences is making a major contribution to the development of the SASWTI; it provides the user with information contained in the data bases of the individual research centers. The information centers interconnected in the Academy network (VINITI, INION, VNTICentr etc.) have the capability of simplifying the establishment of a subscriber network with terminals and to improve the reliability of communications.

It must be noted, however, that a number of funding and legal questions of regulating the cooperation between scientific-technological information facilities and SASWTI subscribers have not yet been settled, even though there is some activity in this regard. Thus a document entitled "Principles for Determining and Calculating Costs of Scientific-Technological Information Activities" has been produced and submitted to the Directorate for Scientific-Technological Information and Propaganda of the State Committee for Science and Technology. In September 1983, at the direction of IPKIR [expansion unknown], a planning conference was conducted with the governmental and branch facilities for scientific-technological information on planning for SASWTI and a schedule for lectures by scientific-technological information facilities in organizations and services. The increasing use of complex project program planning for trends in science and technology brings about new, more stringent requirements for information supply to scientific and technological programs. In connection with this a system is being created for information services and monitoring of complex applied

programs for the solution of the most important scientific-technological programs. The basic task here is to cover all facilities involved in such programs with data bases; information dissemination must therefore become more problem-oriented.

A major increase in efficiency of information dissemination will be possible only with the use of new technologies, including mini- and microcomputers dedicated to information tasks; optical-electronic scanning instruments; high-speed data output on micro carriers; optical memories and optical fiber communication channels.

Apart from the technical and information area support of the SASWTI, its mathematical and linguistic support are of particular importance.

The software must take the form of standardized user program packages which are easily adaptable to a variety of specific uses. In the opinion of this author, the software of the overall system and a significant portion of its use (e.g., the systems for data base management and the systems for automated preparation of information material) must be created by special facilities and made available together with the equipment, while the user-oriented software which is specific for scientific-technological information facilities (e.g., automatic classification, automatic indexing, automatic translation, etc) would have to be provided by the governmental and central branch agencies for scientific-technological information. Among the processes of automatic processing of scientific-technological information, there is particular emphasis on such basic procedures as the morphologic analysis and synthesis of texts, their semantic-syntactic analysis, as well as an automated compilation and linguistic treatment of dictionaries.

These procedures are based upon the systems of automatic classification, automatic indexing and automatic editing of texts, their automatic translation and the systems of dialogue with data banks in interactive language.

Of equal importance is the methodologic aspect of research. Until now, little attention has been paid to the subject-oriented methods of information processing--both the traditional and the automated ones. The laws governing the origin, dissemination and use of data, the requirements and methods for achieving a socially necessary level of knowledge of the users and the information environment as a whole have been investigated to an insufficient degree. Because the information environment has a standardized and system character, it constitutes a natural subject area for research in a separate science: informatics. Basically, informatics is a general designation for a complex program of researching the information milieu which combines contributions from a number of independent disciplines with informatics-specific procedures.

The need for solving specific information dissemination development problems in the general context of informatics became evident in the solution of development problems of the VINITI as an information system. It resulted partially in the formulation of our initial concept of informatics--experiences gained in a development which is today very important for a scientific

Table [p 14]: Integration of INFOTERRA into GDR Environmental Information Systems

<u>Inquiry</u>	<u>Information System Used</u>	<u>Form</u>	<u>Output</u>	<u>Content</u>
Survey information on international and interdisciplinary environmental subjects	UMWELTINFORM	Rapid information-- Environmental Protection (monthly)		Advice on references including annotation or abstract
		Specialized bibliography-- Environmental Protection (quarterly on microfiche)		List of references for special subject area
What references are available in my subject area?	UMWELTINFORM INFORMOOS (automated)	Step 1: Computer Expression a. as a one-time retrospective search b. as monthly information about new accessions		Relevant documentary references with bibliographic data, key words and location
		Step 2: Preparation or procurement (for institutions not having their own information system or library)		Relevant documents as originals or in microfiche
What organizations, reports, books etc on my research area are available in other CEMA countries?	INFORMOOS	Step 1: Listing		Relevant references
		Step 2: Acquisition from other CEMA member countries		Relevant materials
Which facilities worldwide can supply information in my research area?	INFOTERRA	Step 1: Computer expression		Relevant addresses
		Step 2: Acquisition		Relevant materials

approach to the development of information dissemination in our country. Research in that area was conducted in the VINITI over a period of 5 years. It concluded with a report which was accepted by the Scientific Long-Range Planning Council of the Academy of Sciences of the USSR and the State Committee for Science and Technology and was handed down to the implementing and planning agencies.

This report proposes the concept of a step-by-step development of the SASWTI as the foundation for information dissemination within our country. In each of the successive development stages there is a provision for enlarging the number of subscribers to the system and a concomitant increase of the economic effects from investment in information dissemination. Until the year 2005 the technological level of the SASWTI will be determined by the network of automated centers which use documentary and data-graphic data bases via long-range transmission. In addition, there will also be standardized data search systems for individual users. The activity of the system will be manifested by the following: an increase in the annual output of information to be processed of up to 4 million documents; responses to user inquiries numbering up to 3 billion; responses to inquiries requiring remote data search of up to 10 million; and distribution of hard-copy documents to requesters numbering up to 2 billion.

We feel therefore fully justified in stating that this long-term projection constitutes a valid response to requests from the party and the government for an increase in the effectiveness of information activities.

Photo Captions [p 2; photos not reproduced]

The director, L. L. Sumarokov, and the entire international staff of the International Center for Scientific and Technological Information, as well as the local representatives of the Embassy of the GDR in the USSR and the GDR representatives in CEMA are shown welcoming the members of the SED Central Committee, the deputy chairman of the GDR Council of Ministers and minister for Science and Technology, Comrade Dr Herbert Weiz; also, the director of the Research and Technical Development Department of the SED Central Committee, Comrade Hermann Poeschel, as well as the other attendees of the first Moscow-Berlin long-range data transmission.

Attendees of the initial test run of the Moscow-Berlin long-range data transmission on 9 October 1984 express their appreciation for their cordial reception and their wishes for success in the further development of the international exchange of information among the CEMA member countries to the staff of the International Center for Scientific and Technological Information.

9273

CSO: 5500/3010

GERMAN DEMOCRATIC REPUBLIC

BRIEFS

GDR EXPANDS NICARAGUAN TELECOMMUNICATIONS--Nicaragua still intends this quarter to conclude one of the most significant plans concerning the expansion of its telecommunications system, toward which end the GDR has delivered considerable amounts of equipment and technical support. The region northwest of Managua, which contains Leon, the second largest city in the country, and the important ports of Corinto and Puerto Sandino, will obtain more than 10,000 new telephone connections. Most of these have already been installed. The transmission scope of this area will thus increase by 50 percent. Parallel to this development, Nicaraguan construction units in the eastern region of the country are building communications links from the Atlantic port of Puerto Cabeza, in the direction of the city of Esteli. "While we are erecting communication links in the east in order to open up this portion of the country, we are installing telephone and message switching technology around Leon and Chinandega so as to meet the needs of an area which has already been developed economically and agriculturally," explained Bernd Wecke of VEB Radio and Telecommunications Facilities Construction, Berlin. [Text] [Leipzig LEIPZIGER VOLKSZEITUNG in German 9 Jan 85 p 5]

CSO: 5500/3012

INTER-AMERICAN AFFAIRS

BRIEFS

BROADCASTING UNION TO BE ESTABLISHED--San Jose, 19 Jan (AFP)--On Friday 17 countries agreed to set up the Latin American and Caribbean Broadcasting Union [Union Latinoamericana y del Caribe de Radiodifusion, ULCRA] to promote broadcasting integration in the American continent. Argentina, Barbados, Bolivia, Brazil, El Salvador, Peru, Panama, Cuba, Ecuador, Guatemala, Honduras, Venezuela, Nicaragua, the United States, Jamaica, Colombia and Costa Rica agreed to create ULCRA, which will be formalized in June. Representatives from the continent's public service, nonprofit radio and television stations, who met at the first conference of Latin and the Caribbean public broadcasters, passed the recommendation on the subject submitted by a UNESCO expert. ULCRA will be officially created as part of the agenda of the second regional broadcasting conference scheduled for 15 June in San Jose. ULCRA's chief objectives will be to "upgrade and improve public broadcasting, by consolidating state and private nonprofit stations through exchange and co-production of high quality programs." [Text] [Paris AFP in Spanish 1049 GMT 19 Jan 85]

CSO: 5500/2037

ARGENTINA

BRIEFS

TELEVISION ACCORD WITH FRANCE--Buenos Aires, 15 Jan (ELAM)--Aida Bortnik, an adviser for Argentina Televisora Color [ATC], has signed four television cooperation agreements in France. According to the agreements, the television channels that depend on the Public Information Secretariat and on ATC will be able to obtain material from French Television Channels 1, 2, and 3. Another agreement provides for courses for Argentine technicians and film producers. [Summary] [Buenos Aires TELAM in Spanish 1515 GMT 15 Jan 85 PY]

CSO: 5500/2038

BERMUDA

MULTICHANNEL TV SYSTEM DESCRIBED AS WORLD LEADER

Hamilton THE ROYAL GAZETTE in English 6 Dec 84 p 4

[Text]

You may not realise it, but every time you tune in to *CNN* or *ESPN*, you are helping to shape the future of pay television all over the World.

The international television industry has its eyes firmly set on Bermuda, because we lead the way in the high-tech field of microwave broadcasting.

And among the keenest observers of the Bermuda experiment are the US cable TV giants who can hear the death knell sounding for their industry because of the advances made here.

Cable and Wireless engineer Mr. Steve Dickinson, who invented the Island's unique multi-channel system, explained: "There is no doubt in my mind that it is going to be successful in the US when you realise that it would cost you up to \$1,500 to hook up a subscriber to cable television in New York, compared with \$250 with this system.

"You could tuck the whole thing away in a tiny office on the top of a skyscraper and have the filing department on the floor below to pick up the money."

When he puts it like that, it isn't difficult to see the advantages, compared with the nightmare of ploughing up Brooklyn to lay a cable around the power, gas and telephone wires.

Pay television via microwave has been around for ten years in the US. The *Home Box Office* film channel in Washington, for example, is well established.

The Bermuda system is special because it can carry more than one channel.

It was developed after Cable and Wireless realised the *Reuters* Row-grabber high-speed business data service used the same signal as a colour television.

Mr. Dickinson said: "We thought 'hey, why don't we put some television out on this?'"

Cable and Wireless had the multi-channel system put together in the US where there have been many new developments in the field because of a change in the law opening the way for more microwave channels.

Wrangling about who should get the monopolies in the big US cities has meant that Bermuda is

still the only place with a microwave broadcasting system capable of carrying more than one channel, but not for long.

The Bermuda system currently carries only two, the total news network *CNN* and the total sports channel *ESPN*, but there are six channels going begging if copyright problems can be overcome and new programmes bought.

The revolutionary hardware is based at Cable and Wireless in Devonshire.

The "front end" of the system is a television-receive-only (TVRO) satellite dish, slightly more advanced than a backyard dish because it better resists interference from rain and heat.

It points at an eccentric angle to pick up signals bounced off the US Domestic Satellite over the Equatorial Pacific while the installation's better-known giant telecommunications dish gazes high over the Atlantic.

At the heart of the system is the transmitter room where the signal is separated into individual video channels with a

down-converter, not so very different from your home equipment.

Everything after that is a little different.

The signal undergoes video and audio processing to bring it up to broadcast quality, cutting out all interference whether generated by the Earth's atmosphere or a nearby welding torch.

Next, the signal is passed to one of the new technology microwave transmitters.

The transmitter is hardly bigger than a stereo stack sound system and consumes the same amount of power as a colour television, but if this was an over-the-air UHF television transmitter, as used by *Channel 10*, it would probably take up two or three seven-foot high racks and use up to 50 times the power.

The revolutionary equipment behind the mass of flashing lights and TV screens looks more like plumbing than high technology, but it is a century more advanced.

Kept out of sight of prying eyes are the wave combiners at the heart of the multi-channel sys-

tem, which are part of its magic.

The system allows channels to be carried close together without interfering with each other, so wasting less airspace.

The exact frequency in use is a secret, although this has not stopped hundreds of pirates, using American equipment, tuning in illegally.

The company plans to start scrambling the signal soon to shut them out.

As for the future, Mr. Dickinson's short-term hope is that the system will be expanded to its full potential and carry eight channels in Bermuda, although it could be modified to carry many more.

Cable and Wireless can already put out stereo, although the down converter manufactureres haven't caught up yet, but that won't be far away. The system could also carry video-conferencing or teletext on spare audio frequency.

After that, who knows? But Bermuda has such a head start on the rest of the World we should be the first to find out.

CSO: 5540/015

BRAZIL

BRASILSAT SPECIFICATIONS, LAUNCH COSTS DISCUSSED

PY032235 Madrid EFE in Spanish 1445 GMT 3 Feb 84

[Text] Rio de Janeiro, 3 Feb (EFE)--Weather conditions permitting, Brazil will launch its first geostationary satellite on 6 February from the Kouru Base in French Guyana.

The Brasilsat-1 will be carried into space by the French rocket Ariane-3 and put into orbit at 33,800 km above the Equator over the Amazon region. The satellite has 24 radio channels which can process 12,000 simultaneous telephone calls from all over Brazil or the simultaneous transmission of 24 TV programs.

The launching of this cylinder, of 2.16 meters in diameter, 3.12 meters high, and weighing 1,140 kg means that the country will save \$7 billion a year. This is what Brazil has spent renting the Intelsat-II, a satellite owned by a consortium of 109 countries and for the time being Brazil's only channel for national and international communications.

Brazil has invested \$210 million to purchase this and another satellite, the launching will cost some \$58 million and the insurance of all operations will add up to \$14 million more.

The Brasilsat, which will be launched along with the Arabsat owned by a consortium of 8 Arab countries, will become commercially operational in 1 and 1/2 months. It will be operated from the Guaratiba Center in Rio de Janeiro.

This operations center is equipped with two antennas 14.2 meters high and 6 meters in diameter to track satellite signals and make small corrections to its orbit.

There is another antenna 16.2 meters high allotted for satellite communications only which will be able to serve other South American countries in the future.

CSO: 5500/2039

COSTA RICA

BRIEFS

NEW RADIO STATIONS--Yesterday the Government Council approved the use of 17 new medium wave frequencies by two new radio stations that will broadcast educational and cultural material. It also approved the use of five FM frequencies by the Costa Rican Institute of Radiophonic Training [Instituto Costarricense de Enseñanza Radiofónica], which operates by virtue of an agreement with Liechtenstein principality. The new radio stations will be inaugurated in February by President Luis Alberto Monge and Princess Nora. They will be located in Guanacaste and Corredores, near the Panamanian border. [Summary] [San Jose Radio Impacto in Spanish 1830 GMT 23 Jan 85 PA]

CSO: 5500/2037

MEXICO

BRIEFS

ERICSSON TO DELIVER EQUIPMENT--Teleindustria Ericsson--Ericsson's subsidiary in Mexico--landed an order worth 1.5 billion kronor before Christmas. The order came from the Mexican telecommunications agency, Telefonos de Mexico (Telmex) and involved telephone stations and analog and digital transmission equipment. Two-thirds of the station capacity will consist of digital AXE systems and this puts Ericsson's sales of AXE in this country at 660,000 lines. Earlier in 1984 Ericsson received two orders for AXE stations in Mexico. Around 20 percent or 300 million kronor of the latest Mexican order will go directly to Sweden. The rest of the production will occur at Teleindustria Ericsson's factory in Tlalnepantla outside Mexico City. The deliveries will be made over a 2-year period starting at the end of the year. "We have been in Mexico since the beginning of the century and the country is a very big and important market for us," said sales director Ragnar Back, who thinks more orders will come in. [Text] [Stockholm SVENSKA DAGBLADET in Swedish 17 Jan 85 p 6] 6578

CSO: 5500/2567

BANGLADESH

NEW EXCHANGE OPENED, NETWORK PLANS TOLD

Dhaka THE BANGLADESH TIMES in English 1 Dec 84 p 1

[Text] Kishoreganj, Nov 30--The Principal Finance Secretary and Financial Adviser, Mr M. Syeduzzaman, said here today that all the upazila headquarters would be brought under telephone network system, reports BSS.

He said that the Telephone Board had already taken initiative to bring the 332 upazila headquarters under telephone system. The rest of the places would be covered in phases, he said.

Inaugurating the new 400-line automatic telephone exchange here the Finance Adviser said with a view to improving the internal telecommunication system all the important towns of the country were being brought under country-wide dialling system. 22-district headquarters had already been brought under the system, he pointed out.

Mr Syeduzzaman said that a fast and dependable telephone network was essential for conducting a sound economic and trading system and added the opening of the new telephone exchange in Kishoreganj would meet the long felt demand of the local people.

He said that keeping in line with the government policy of administrative decentralisation the implementation of the plan for providing improved telephone service to the majority on of the system of the upazila of the people through expansi-level was progressing fast. [paragraph as published]

The Adviser said it was very happy to note that the revenue earnings of the Telephone Board was going up gradually and in 1983-84 the Board had earned Taka 124 crore revenue whereas in 1981-82 the revenue was only Taka 84 crore.

The function was also addressed by Chairman of Telephone Board, Kazi Abdur Rouf.

CSO: 5550/0027

BANGLADESH

BRIEFS

COPALGANJ AUTOMATIC EXCHANGE--Gopalganj Dec. 19:--An automatic telephone exchange 400 lines was opened in the local telephone exchange bhaban premises by Major-General Mohabbat Zan Chowdhury Minister for Establishment and Re-organisation yesterday. The teleprinter circuit and the new trunk board will be completed within three months. The Gopalganj telephone bhavan will also be expanded he said. [Text] [Dhaka THE BANGLADESH OBSERVER in English 21 Dec 84 p 7]

CSO: 5550/0028

PAKISTAN

CANADA SAID WILLING TO PROVIDE DIGITAL TECHNOLOGY

Karachi DAWN in English 9 Jan 85 p 4

[Text]

ISLAMABAD, Jan 8: Canada is supporting Pakistan and Turkey in a major regional association which will provide for the transfer of the leading digital telephone technology.

In an interview with APP, Mr R.A. Ferchat, President, Northern Telecom Int'l (based in Canada) currently on a short visit to Islamabad, said that he along with his team will hold discussions with Pakistani authorities relating to the transfer of technology in the field of telecommunications. He is accompanied by Mr. L.A. Cox, Managing Director of Netas (Istanbul).

Mr. Ferchat said that the digital technology was the technology of the modern age and was being utilised in the highly industrialised countries like United States and Canada.

In reply to a question, about the

functioning of the new technology, he maintained that digital system had reliability and flexibility as compared to the old system prevalent in Pakistan.

Mr. Ferchat said, the aim of Netas is to be the closer supplier of digital telephone exchanges to Pakistan fully supported by Northern Telecom. Northern Telecom is the leading supplier of digital exchanges in the world.

He said, the proposal which has been made to the Telephone and Telegraph Department has received the support of the Government of Turkey and Government of Canada. The discussions which will take place over the next few days with Pakistan officials, will provide the details for the technology transfer to ensure that Pakistan obtains the latest technology available in the world for telecommunications.

CSO: 5500/4715

PAKISTAN

COMMENTARY VIEWS PLANS FOR 2ND TELEVISION CHANNEL

Karachi DAWN in English 13 Jan 85 p 5

[Text]

THE report that work is under way to establish a second channel for educational television will be well-received. The Rs 523 million-channel is primarily designed to boost the literacy rate in the country. It is clear that the effectiveness of the second channel in the fight against illiteracy will depend to a large extent on the arrangements made for the viewers at the receiving end. PTV, in co-operation with the Allama Iqbal Open University, is already broadcasting a programme to impart literacy to the unlettered, but little is known about its impact and the size of its audience. This is certain that the utility of literacy telecasts can be increased only if the number of community centres equipped with television sets, reading material and instructors is correspondingly expanded. To derive optimum benefit from the second channel, it is estimated that 10,000 centres will have to be set up by the Federal Education Ministry. At present there are only 2000 such institutions, and their number does not seem to be growing as

work progresses on the TV project.

While the second channel will help in the spread of literacy—the Sixth Plan expects two million adults to be made literate by 1988 through this medium—it would be desirable if television is used on a larger scale than now for screening educational programmes. At present some extremely instructive films—mostly foreign—are telecast off and on. But their number and frequency is not enough and the time of telecast is not always convenient for the students who could benefit from it most. It is, therefore, essential that maximum use be made of the second channel by producing and telecasting programmes for students. While foreign films should be dubbed in Urdu and the regional languages, there is need for more educational programmes to be produced locally. Transmission time would also have to be expanded. If television's educational potential is to be fully realised, PTV will be expected to show more creativity, imagination and planning.

CSO: 5500/4716

PAKISTAN

BRIEFS

OFFICIAL ON SPACE PROGRAM--Karachi--Mr Salim Mahmud, chairman, Pakistan Space and Upper Atmosphere Research Commission, has said that Pakistan is entering into space technology at a firm steady pace for which the groundwork has almost been completed. Talking to the PAKISTAN TIMES here, Mr Salim Mahmud said that the Ground Receiving Station for satellites which is being constructed at Islamabad is in its final stage and will be commissioned near year, "Insha Allah." He said that with the completion of that station, Pakistan will become independent, at least in remote sensing data of its territories for analysing purposes. Speaking about Pakistan's space programme for launching its own satellite into orbit, Mr Salim Mahmud said the groundwork has been completed and designs and other feasibilities for the satellite have been given the final touches, and now it is ready to be presented before the cabinet for formal approval. [Excerpts] [Rawalpindi PAKISTAN TIMES in English 28 Jan 85 p 4]

CSO: 5500/4716

GHANA

BRIEFS

BROADCASTING SERVICES IMPROVED--The Ghana Broadcasting Corporation (GBC) would provide improved services to both its listeners and viewers as from April next year. In addition, colour television would also be introduced in the country in a year's time. The Deputy Director General of GBC, Mr Owusu A. Prempeh, made these disclosures when he launched the Corporation's Golden Jubilee Celebration at Koforidua. He said these improvements had been made possible because of the importance the PNDC Government attaches to the GBC, hence its commitment to rehabilitate the Corporation's broken-down equipment. Mr Prempeh stressed that no country can achieve any meaningful development without an effective broadcasting network since both radio and television play a very vital role in disseminating government policies and educating the people to understand them. In his address, the Eastern Regional Secretary, Mr D.O. Agyekum, expressed grave concern about the persistent instances of radio wire theft in all parts of the country. The Regional Secretary appealed to the public to refrain from this act in their own interest since whoever is caught would not be spared. [Text] [Accra PEOPLE'S DAILY GRAPHIC in English 12 Dec 84 p 5]

NEW SWITCHING SYSTEM--In its determination to be abreast with modern telecommunications technology, the Posts and Telecommunications Corporation (P & T) was yesterday formally introduced to the mechanisms of a new Fujitsu Telecommunications Switching System at a one-day seminar organised for its top engineers in Accra. The equipment, one of the latest telecommunications electronics to be developed in recent times, was introduced by Mr Eiichi Odera, General Manager of Overseas Systems Division of Fujitsu Limited of Japan. He explained the mechanism through a lecture and a film show which lasted for about three hours. The new switching system is expected to form part of the telecommunication devices to be used for the Pan-African Telecommunications Project (PANAFTEL). In a short speech to open the seminar, Lt-Col Christine Debrah (rtd), Director-General of the Corporation, stressed the importance of the seminar especially at this crucial period when the corporation is being re-organised to achieve its expected goals of efficiency and profitability. She said the introduction of Fujitsu equipment in Ghana by C. Itoh and Company Limited and Fujitsu Limited, both of Tokyo, Japan, clearly shows the importance being attached to the PNDC's Economic Recovery Programme by reputable international companies. Mr Eiichi Odera said Ghana has a bright future in her Economic Recovery Programme. That is why his company as well as other Japanese companies are enthusiastic to help Ghana to improve her telecommunications systems.

Mr Odera therefore assured the P & T Corporation of his company's support in the acquisition of modern telecommunications equipment that will help it to provide efficient service both within and outside the country. [Text]
[Accra PEOPLE'S DAILY GRAPHIC in English 14 Dec 84 p 8]

CSO: 5500/70

NIGERIA

P AND T TRAINING SCHOOLS 'GRINDING TO A HALT'

Lagos SUNDAY TIMES in English 9 Dec 84 pp 1, 19

[Article by Yakubu Momodu]

[Text]

THE Post and Telecommunications Training Schools at Oshodi and Kano are gradually grinding to a halt.

This is because the schools could not admit freshmen for the second year running due to lack of funds.

The schools which now run both OND and HND courses in Telecommunications Technology are the only institutions for the training of both the medium and high level telecommunications personnel in the country.

A Sunday Times investigation revealed that the failure of the institutions to admit students for the 1983/84 and 1984/85 academic year was due to the failure of the Ministry of Communication to provide sufficient funds for the running of the schools.

The Sunday Times gathered that about 16,000 applications were received from candidates for the 1983/84 academic year but

due to the financial squeeze the schools could not process the applications for admission.

There are as such no parts one and two students currently undergoing courses at the institution.

A further investigation revealed that the health clinics at both Oshodi and Kano were not functioning.

In each case. The Ministry of Health will require about N56,000 to equip the two health centres, the Sunday Times gathered.

One of the greatest and apparently unique problems facing the institutions is inadequate indigenous training manpower at both Kano and Oshodi schools.

Of the 39 engineers in the teaching staff at the Oshodi school as at January 1984, only ten are Nigerians while others are Indians, our sources said.

It was also disclosed that though the schools have been approved to award both the OND and HND certificates by the National Board for Technical Educa-

tion (NBTE) since 1979 they have not been able to meet the requirements set by the board.

For this reason students of the institution who would have written their OND examinations in June this year could not do so.

Meanwhile they have been moved to their specialisation programme (HND) in their respective chosen fields by the institution pending the OND examinations. would be written.

In an exclusive interview, the Public Relations Officer of the school, Mr. Ose Ogunkorede, confirmed the Sunday Times investigation but said that the Post and Telecommunication Training School was an in-house Training programme whose management has power to reschedule its programme to suit its economic needs.

Looking at the training schools, Mr. Ogunkorede said, much money has been expended on buildings, equipment and facilities.

But recent occurrences

have shown that lack of funds to enhance effective continuity is facing the organisation, he added.

This points, he said, was made clear in a status report by the principal of Oshodi school, Engineer A. Adebajo when he said, "The P and T Training School started facing problems for some years back.

"The issue facing the centre is that the government has built a structure which it cannot sustain with this current level of funding"

A Sunday Timesman who visited the Oshodi Training Centre found that many of the buildings were dilapidating and unrenovated.

Some of the structures started some years back had been abandoned while some broken doors and windows were not replaced.

A student spoken to said, "We are all in dilemma. We do not know what is happening.

NIGERIA

PANEL SUBMITS REPORT ON TV RATIONALIZATION

Kaduna SUNDAY NEW NIGERIAN in English 16 Dec 84 p 16

[Article by Nkem Agetua]

[Text]

THE committee on the Rationalization of Television Services has suggested that the main task of the Nigerian Television Authority should be to provide a television service which enables national view points to reach all the people in the country.

Submitting the committee's report in Lagos on Friday to the Chief of Staff Supreme Headquarters, Major-General Tunde Idiagbon, Dr. Christopher Kolade, chairman of the committee said Nigerian Television Authority service should also co-ordinate information as well as provide the people with a feedback mechanism to the national level.

He said that the communication conveyed by the NTA should be received by the viewer in a form which enabled him to understand it and to proceed to any follow-up action required of him.

"This means among other things, that some parts of NTA's programmes must be done in select local languages if it is to be meaningful and effective," he added.

Dr. Kolade said that in making recommendation, the committee had noted the fact that state-owned television organisations

now provided in eleven states, "a television service addressed to the particular needs of the state."

He said that the recommendations were aimed at bringing down costs and making the NTA a better-managed organisation providing a television service which was more cost effective and more relevant to the needs of the people of Nigeria.

Major-General Idiagbon thanked the committee for a thorough job and expressed the hope that the recommendations when implemented would go a long way in streamlining television broadcasting in the country in terms of maximum coverage, reduction in cost, and the enhancement of efficiency, national unity, peace and harmony.

He said only in that way could government utilise television as an instrument of social change in monitoring a systematic and balanced programme of public enlightenment, educating the public on its policies and actions and promoting a sense of national unity, pride and consciousness.

The Chief of Staff also expressed the hope that the recommendations would enable the objectives of television broadcasting which were informing, entertaining and educating the public to be achieved.

CSO: 5500/73

NIGERIA

BRIEFS

ABUJA RADIO STATION PROBLEMS--Radio Nigeria II, Abuja, is yet to be linked with the rest of the country on telephone. Lack of telephone facilities has made it difficult for the station to function efficiently since its inception in 1980. This was disclosed by the station's general manager Mr Joseph Angulu during an exclusive interview in his office on Monday. Mr Angulu said only his official residence previously occupied by his predecessor was fitted with telephone and the city office of the radio in Garki which also got disconnected by P&T sometime as a result of unpaid bills. He disclosed that the Minister of the Federal Capital Territory, Major General Mamman Vatsa has waded into the matter by ordering the reconnection of the city line and the installation of the facility at the stations operational base. Following these developments, Mr Angulu went on, the P&T has come to carry out feasibility study in the station and this includes the number of poles and wires required for the purpose. Also, the station is now being supplied with electricity from plants in Gwagwalada from 6 a.m. to 6 p.m. as against the previous practice where it depended on its generators alone which made it to open transmission at 6 a.m. and close down at 8 p.m. or 10.15 p.m. It now closes at 11.45 p.m. the GM said. Mr Angulu stated that a lot of money was now saved due to this development, pointing out that the radio station used to spend ₦3,000 per month on diesel fuel to power the plants, since they are only now operated when public light goes off. He refused to speak on the reorganization plan going on at the station, but Daily Times gathered that about 37 staff would be affected. [Text] [Lagos DAILY TIMES in English 7 Dec 84 p 32]

DIGITALIZATION COMMITTEE FORMED--Lagos, 28 Jan (NAN)--The minister of communications, Lieutenant-Colonel Ahmed Abdullahi, today in Lagos inaugurated a committee on the formulation of strategy for digitalization of the Nigerian telecommunication network. The minister told members of the committee that their task was, among others, "to determine the most appropriate strategy for the digitalization of the switching and transmission functions of the trunk and local telephone network in the country." Lt-Col Abdullahi urged the committee to execute their assignment with despatch "in view of the urgency attached to it." The eight-man committee is headed by Mr Sunny Kentebe. The other members are Messrs A. E. Iyamabo, D. O. Daramola, E. O. Fatoye, Umaru [name as received], E. B. Ojeba, B. Carew and B. Ishiyaku. [Text] [Lagos NAN in English 1540 GMT 28 Jan 85]

SOUTH AFRICA

SABC REVAMPING 18 RADIO STATIONS

Johannesburg RAND DAILY MAIL in English 12 Jan 85 p 12

[Article by J. Manuel Correia]

[Text] The SABC, in a shock move, is ruthlessly revamping its 18 radio stations.

Several could disappear altogether or reduce broadcasting hours--including Springbok Radio and Radio 5--or be amalgamated. The creation of at least two more regional stations also appears to be on the cards.

The bottom line will be: if a station is not making money it will either be closed down or amalgamated.

The move, which follows a comprehensive study by the SABC, appears to be aimed at bringing radio up to meet the challenge of TV.

Although official sources at the SABC were tightlipped yesterday, it is understood the "rationalisation" move will be announced by the director-general of the corporation, Mr Riaan Eksteen, next Wednesday.

The SABC is not confirming reports that Springbok--which has about 1 800 000 listeners on weekdays--will either close down or be forced to reduce its air time.

Neither is it confirming that two new regional stations will be created.

However, observers believe that Springbok is in the firing line because, although it is popular, its below the line costs are making the station uneconomic, placing an additional financial burden on the SABC, whose separate English and Afrikaans services, which carry no advertisements, run at a loss.

Radio 5 has also been shedding listeners in droves. The fact that it is on stereo FM in Johannesburg and Pretoria has not helped at all. It is difficult to see how the station can be revamped to regain its lost listeners.

The SABC will clearly want to build up Radio Lotus for its Indian listeners and to provide more material for its coloured listenership.

It is also believed that although no country can do without a national network, regional stations clearly hold the best advertising potential and cater for the needs of particular demographic areas.

The rationalisation will also affect the corporation's black stations, but it is not known to what extent.

Although the reason for the SABC's rationalisation is financial, observers believe it indicates a move to a more free market situation and that other stations such as Capital, Swazi and 702 will find it relatively easier to expand should they wish to do so.

CSO: 5500/80

SOUTH AFRICA

TELEVISION VIEWERSHIP SURPASSES EUROPE

Johannesburg SUNDAY TIMES in English 13 Jan 85 p 3

[Article by Claran Ryan]

[Text] In spite of the barrage of criticism levelled at SABC-TV over its programme content white South Africans watch more television than do most West Europeans.

Only Britons watch more TV than South Africans. The average adult in South Africa watches 2.7 hours a day compared with 3.17 hours in Britain, 2.15 in France, 2.22 in West Germany and 2.67 in Italy.

These are the findings of a survey by advertising firm SSC&B:Lintas on viewing habits in South Africa and Western Europe.

South Africans' predilection for the small screen is remarkable as most white viewers have only one bilingual channel. West European nations have several channels.

Videos

Mike Armstrong, media director for SSC&B:Lintas, says South Africans are more avid TV viewers than their European counterparts because of the dearth of entertainment in this country.

"This is borne out by figures on video recorder penetration in South Africa--possibly the highest in the world. Hours spent watching videos were not considered in the survey."

Ownership of TV sets in South Africa by whites is estimated at 93%--79% have colour sets--compared with 96% (47% colour) in Italy, 98% (84% colour) in West Germany, 93% (62% colour) in France and 98% (79% colour) in Britain.

The arrival of TV 4 and a possible independent channel is expected to lift TV set sales in South Africa. An increase in viewing hours a day is likely.

Zapping

A broad selection of channels has led to a practice known as zapping in Europe where viewers switch channels during commercial breaks to see "what's on the other side".

This worries advertisers because commercials do not reach the widest possible audience. Opening of more channels in South Africa may give rise to zapping here.

The survey concludes that long programmes are less likely to be zapped and commercials shown during an interrupted programme are most effective.

The cost of TV advertising South Africa is R5 a thousand audience, which is more expensive than in Italy, Germany and Britain, but cheaper than in France where three major channels charge an average of R7,49 a thousand.

The average charge a thousand viewers in Italy is R2,97, in West Germany R3,36 and in Britain R4,20.

Local Stations

Commercial TV in Britain soaks up 31% of total ad-spend compared with 21% in France, 9% in West Germany, 47% in Italy and 21% in South Africa.

Italian TV takes an exceptionally high proportion of adspend because there are about 500 stations apart from the State-run channels.

In Britain, BBC 1 and 2 do not carry advertising.

Of the five nations surveyed only in the UK are commercials shown during programmes. In France and West Germany advertising is concentrated in blocks, usually during the peak viewing hours of 18h30 to 20h30.

Sponsored programming, another source of advertising revenue, is not allowed in South Africa, France and Italy. In Britain it is not expressly forbidden, but does not occur. It is allowed in West Germany.

The survey found that block advertising was successful in West Germany and air time in 1984 was 150% oversubscribed.

Contrary to popular belief, television has not reduced newspaper advertising but increased it. SABC went commercial in 1978 and since then Sunday newspapers have increased their advertising revenue by 199% compared with a rise of only 79% in the five years before TV.

CS0: 5500/80

SOUTH AFRICA

ALL-INDIAN RADIO STATION HOPES TO ATTRACT MORE LISTENERS

Durban THE DAILY NEWS in English 15 Jan 85 p 13

[Text]

MR Saffi Siddiqi, the man who last week took over the reins of Radio Truro, South Africa's first all-Indian radio station, says listeners are in for a big treat.

Mr Siddiqi, formerly a programme manager of the radio station, will now control the financing, operations and administration. The radio station was previously run by the Kirsh brothers and managed by Mrs Zena Watkins.

Mr Siddiqi declined to divulge how much money changed hands for the radio station, except for saying "a lot".

"As with all other radio stations, listenership has dropped. My immediate task is to give the radio station a new look and draw more listeners at the same time.

"The emphasis will be on Indian culture and we will continue to broadcast in the five ethnic languages. However, I have arranged

with my contacts in London and Bombay to supply us with good material which will include interviews with film stars, gossip and good quality music," said Mr Siddiqi.

Unlike Radio Lotus, which is beamed live by the South African Broadcasting Corporation, Radio Truro prerecords its programmes, which are then sent to Swaziland for broadcasting.

Mrs Watkins said: "Radio Truro is now ready to be run by highly competent and responsible members of the Indian community".

Meanwhile, Mr Issi Kirsh, managing director of Swaziland Commercial Radio (Pty) Limited, also announced the handing over of full control of the Portuguese radio station, Paralelo 27, to Mr Alex Caratao.

"We feel that the success of both stations will be greatly enhanced by allowing members of the respective communities to become personally involved," he said.

CSO: 5500/74

FRANCE

MATRA HAS EUROPE'S LARGEST WHITE ROOM FOR SATELLITES

Paris INDUSTRIES ET TECHNIQUES in French 10 Nov 84 p 39

[Article by Alain Perez: "Already, Satellites in Small Series"]

[Text] The white room in Toulouse is designed to integrate five satellites simultaneously. Gems weighing over 1 ton, with hardly more power than an electric iron.

A 2,150-m² white room, a team of 20 experts, one year of assembling and testing. A total of 400,000 work hours to design and assemble a 1,100-kg gem. A technology concentrate hardly more powerful than an electric iron, but capable of transmitting data at 125 Mbits/s. A telecommunications satellite is above all a subtle technical, industrial and... political puzzle. But it is also a genuine market. Thus, it is estimated that until 1992, 200 civilian telecommunications satellites will have to be built in the Western world. Sales of FF 85 billion, not including the launchers and ground stations. At MATRA [Mechanics, Aviation and Traction Company], space now accounts for 16 percent of the group's overall sales, i.e. FF 1.2 billion for 1984. A little over 1,000 people, half of whom are in Toulouse. One fourth of these operations have to do with telecommunications satellites, 30 percent with earth-observation satellites, and 20 percent with the Ariane instrument pack. A total of some 12 MATRA satellites are now on orbit, 5 of them telecommunications satellites. Early this year, J.L. Lagardere clearly stated: "MATRA is the leading European company for satellite operations, sales and projects. Obviously, we are still far behind the Americans. But we are on our way to achieving a measure of profitability. It is clear that, in the long run, Toulouse will be the capital of the space industry."

For MATRA Space, the high point of the summer was obviously the successful twin launching by Ariane of Telecom 1A and ECS2. Both were integrated in Toulouse. For these two projects, we can already speak of "small series." A total of five ECS [European Communications Satellites] will be built (for the European Eutelsat organization) as well as three Telecom satellites (for the PTT [Post and Telecommunications Administration]). Telecom 1B will be launched next year. The third satellite (1C) will remain in a pressurized container. In reserve, in case of a failure.

Three satellites are now being integrated in the Toulouse white room: ECS 3, Telecom 1B, Spot 1; and three platforms: ECS 4, Telecom 1C and Spot 2. Since the room was designed to integrate five satellites simultaneously, it is therefore underused. "The only way to expand is to export, and that means exporting telecommunications satellites. But it is a hard job with competitors like Hughes or Ford Aerospace."

In one respect, however, Toulouse is practically an even match for the United States: earth observation for civilian purposes. Spot 1, to be launched next year, will be the heaviest and the finest of all the satellites built in Toulouse until now. Its lifetime will not exceed two years. But it will be capable of exploring the earth within a 60-km wide strip, with a ground resolution of 10 to 20 m. Its missions will be many and peaceful: map-making, environment monitoring, resources inventory. Two cameras forming a V will provide stereoscopic views of the same ground area. The data will then be transmitted to the ground, to specific stations. The first receiving station was placed in service early this year at Aussaguel, near the space center. A company (Spotimage) is in charge of worldwide marketing. By the end of the decade, it will sell 60,000 to 100,000 pictures per year.

For all that, more work must still be found for the largest white room in Europe. The Athos project (second-generation telecommunications satellite) has been thrown back into question and, anyhow, it will not be launched as scheduled by the first Ariane 4. The space industry is not immune to crisis. The technologies are there; what is lacking most is clients.

9294

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FRANCE

CNES, INRA DO JOINT REMOTE-SENSING RESEARCH

Paris ELECTRONIQUE ACTUALITES in French 16 Nov 84 p 21

[Article signed H.P.: "Space Remote-Sensing: The Ministry of Agriculture Is Preparing To Operate the Future Spot-1 Satellite"]

[Excerpt] One year before the launching of the French remote-sensing satellite Spot 1, the authorities and organizations concerned are actively preparing to take full advantage of the data it will supply to benefit agriculture. To that end, the Ministry of Agriculture has created a Commission on Remote-Sensing which acts as a coordinator for the various departments of the ministry and the teaching and research institutions it supervises.

A remote-sensing workshop was also set up; it is equipped with Numelec processing systems and, for the time being, employs 6 or 7 people. The workshop, which was set up in Toulouse, is active in several areas. Apart from its role in informing people and making them aware of remote-sensing methods, it carries out research on the applications of remote sensing in agricultural water-supply and water-resources management. The workshop is lending its support to organizations that have already acquired expertise in remote sensing. Finally, it keeps research centers informed of the demand for remote sensing.

As for the INRA [National Institute for Agronomical Research], it devotes the equivalent of 15 researchers per year to remote sensing. The object of its research is essentially to determine the "spectrum signature" of the physical surfaces revealed by electromagnetic radiation and, to this effect, it develops image-processing software. The fields involved range from research on diseases to inventory and development, and include crop forecasting and agrometeorology.

The wavelengths now accessible are in the visible and near infrared for the Spot satellite, and in the technical infrared for weather satellites. The microwave range is the object of research to study the hybrid and structural aspects of soils in order to prepare the future operational stage of the

remote-sensing satellite program. The objectives, research orientations and means required to carry out a remote-sensing research program are listed in a Charter prepared by the INRA last January.

This Institute works in close cooperation with the National Center for Space Studies. The latter is providing financial support for research programs in order to develop processing and interpretation methods for satellite data. In addition, symposiums are organized, like that of 14 November which was devoted to agriculture, in cooperation with the Ministry of Agriculture.

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NETHERLANDS

TECHNICAL IMPROVEMENTS FOR VIDEOTEX SYSTEM

Amsterdam ELSEVIERS MAGAZINE in Dutch 15 Dec 84 p 22

[Article by Willem Kran: "Viditel: Begins Again, but Better now"]

[Text] Viditel, the unwilling parade horse of PTT [Post, Telegraph and Telephone] which together with its illegitimate little brother Teletext is the most visible sign of the still unavoidable information society, after a difficult youth and a very sad adolescence, now seems to have become a level-headed and especially unassuming adult. Viditel has found its niche, so to speak, and that niche is in the professional market, perhaps not so sensational numerically, but in every case attractive as far as finances and continuity.

The Viditel prophets, who still operated in 1979 with so much self-confidence, then predicted that before 1985 certainly 100,000 subscribers for this medium of the future would have been obtained. That figure still makes PTT officials in The Hague highly exasperated, because they have been troubled until today by this hefty wrong estimate.

Engineer D. ten Hove, who has Viditel under his wing in the PTT telecommunications branch says, "Yes, if you promise the public in a market research report that for the small amount of 10 guilders all the information you can imagine can be conjured up on the screen, then people do want it. And with that optimistic background, meanwhile the government has saddled us with Viditel." At this time Viditel has about 14,000 subscribers and Ten Hove says it will be very fortunate if that number increases to 60,000 in 1989. Consequently do we finally have a sensible estimate?

Ten Hove says: "We have learned from our mistakes. We have especially learned that you must take a relative view of market research, not to say be suspicious of it. We are now even being approached from the United States, because we have gained so much experience in this field.

Spectacular

The simply spectacular increase of the number of Viditel subscribers this year, shows that the wind can always blow from an unexpected quarter. A year ago there were 6,000 customers, the first who saw something in this form of videotext, and now there are already 14,000. This increase must be sought mainly in the proud owners of home computers. Because through Viditel, they can get computer programs simply and cheaply. The interest in that is so great, that 2,000 applicants have even been placed on a waiting list, until the necessary input and output equipment can be delivered.

Schools can also call on all kinds of educational programs via Viditel. The publisher Educaboek in Culemborg has, for example, a data bank with over 100 computer programs, which schools can draw on for a relatively small amount. The fixed costs of Viditel amount to 10 guilders a month (exclusive of BTW Value-added tax), while it is not necessary to pay separately for a program from Educaboek. A one time registration fee of 195 guilders is payable, to which is added a yearly amount of 300 guilders. In exchange Educaboek then supplies a book with information on the programs available, plus free access to the Viditel data bank.

Consequently Viditel's future is now on the professional market, as opposed to what was hoped earlier and unlike its half-brother Teletext, which must succeed in the consumer market.

Sometimes one laughs at the small numbers of Viditel, which compared with the 500,000 owners of a teletext machine, indeed does not make a great impression. Ten Hove's reaction to that is "it is easy to talk. Teletext is free. It is transmitted for nothing at all with the television signal, and you only need a special device to get it. Most people who buy a new TV now, naturally get a Teletext machine. It is also a pioneer. People now see pages of text on the screen instead of the newspaper."

"On the other hand, Viditel operates with so-called private consumer groups. It is not a public medium, at least not entirely. A third of the subscribers use Viditel very intensively and they are now precisely the groups which use private data: information which is only intended for definite groups, for example, in business. Educational software is also an example of that."

Blockades

Viditel is regularly consulted in the transportation world. The Tradicom and Transpotel data banks provide up-to-date information

about border blockades, strikes, delays at the borders and road conditions. In addition, loads can be exchanged via the data bank to increase the degree of utilization of the fleet of trucks. The information about the available load room and the freight offered is only attainable for a private consumer group. The carriers would never have begun such a system without that confidentiality. The Telematica data bank of the medical foundation offers doctors the opportunity to project chemical formulas and all types of other information about medicine on the screen, and so there are still countless not very sensational, but important applications for Viditel.

Naturally that also has disadvantages compared with Teletext, especially for the directors of Viditel itself. Ten Hove says: "Numbers have a monopoly in Teletext. They can do what they want with those pages. But we are in the shackles of dull consultation with the providers of information, with people in the PTT, with politics and what have you. That is really a millstone which hangs around our neck."

In the beginning, Viditel stretched out its eager hands to the simple consumer, that approach has now been completely abandoned. Ten Hove says, "the consumer? We have not gone nearly so far yet. As regards that, we actually have a radical change behind us. We abandoned that original policy in 1982. Oh! we naturally get all kinds of questions from the gossip sheets and NIEUWE REVU and so forth. They also want to get in the data bank, but we are better off rid of them than rich. Mail order businesses and all kinds of sex information are involved in it. But it is really only possible to show that with demonstrations. Then it is always requested first.

Recently a large Videotext conference connected with an exhibition was held at the RAI /Bicycle and Automobile Manufacturers Organization/. All kinds of things, horns, bells and rotating lights were demonstrated there in a very showy fashion. But a development, on which the PTT is working secretly in the Dr Neher Laboratory in Leidschendam, was still withheld from the public. The time was not considered ripe for it. Nevertheless EW /ELSEVIERS MAGAZINE/ was allowed to attend a demonstration in the laboratory of this system which currently has received the name Vidiwoord.

Operating with Viditel amounts to frequently pressing buttons with numbers. In that way, one can break a way somewhat laboriously through all kinds of search and information systems to the desired facts. "Must that be so difficult?" Engineer H. Zuidam of the Dr Neher Laboratory asked himself that question together with a number of associates several years ago. Since then, it is

estimated that the laboratory has spent 10 man years on designing an entry system. The system is not completely clear, but a short demonstration makes it obvious that the use of Viditel will increase by leaps and bounds with it.

Whoever, for example, wants to go on a vacation to Italy, only has to type the country's name and be presented conveniently arranged with all kinds of information from all kinds of travel bureaus in a number of travel folders. Compare that just once with the present operational system. First you choose a travel category, then a travel bureau, then a way to travel and so forth. The same is true for news, for example. You type in the word, and then the opportunities for choice appear: sports, weather, politics and so on. If "weather" is entered afterwards, then all kinds of countries and regions appear as an option. It is a much easier and quicker system than the present one, among other things, because the user does not have to struggle with the question at what data bank he will apply to with his questions.

According to Zuidam, experiments with persons who were more or less volunteers have also provided unmistakable results: the users appeared, on an average, to find half as much more information, compared with the old system, and they spent, on an average, less time on it. The user views much fewer pages of text before he reaches his goal. Consequently he is distracted much less quickly. Only the selection of the first entry is sometimes a problem. If you select the wrong entry, you run the chance of getting hopelessly lost.

In order to prevent that, some backups are built into the system. Misspelled words are automatically corrected and the system also provides hints: which can help the user back on track, if a definite entry is not found. In short, the system is rather intelligent and consequently some enthusiasm is justified. Zuidam says: "British Telecom is the inventor of View data and the German PTT has connected with it as the first outside data bank. We believe that this system, Vidiwoord, can become just as an important breakthrough."

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SWEDEN

TELECOMMUNICATIONS AGENCY DIRECTOR ON NEW TECHNOLOGIES

Stockholm DAGENS NYHETER in Swedish 18 Jan 85 p 10

[Article by Ann-Charlotte Samec]

[Text] The sharply criticized Telecommunications Agency has yielded on a number of important issues on which it was strongly denounced last fall. The Telecommunications Agency now recommends that the monopoly on telephone sets be eliminated. All video text customers will have equally favorable rate schedules. The agency will continue to pay a value-added tax on telephones and customers who complain will be dealt with in a spirit of greater understanding and generosity.

But it is not because of the massive criticism that the Telecommunications Agency will now implement extensive changes in several areas.

"We are not making any changes because we are complaisant. But developments have occurred rapidly and old rules no longer apply," said general director Tony Hagstrom.

He said there have been discussions at the agency for several years on the questions that have been the target of such sharp public criticism in the last half year.

At the same time Tony Hagstrom says the criticism must be taken seriously and concedes that on one point the agency took note of the criticism.

"We do not have very good contacts with our small customers. Big improvements must be made there."

Does this mean there will be a popularity offensive aimed at ordinary subscribers?

"Well, no, I wouldn't call it a popularity offensive."

But this is how the agency will treat "small customers" in the near future:

Customer complaints will be dealt with sooner and assistance will be provided as quickly as possible.

Compensation for those who have problems with their service will be more generous. Anyone who has had trouble with the telephone for more than 10 days will not have to pay the entire quarterly fee for the main subscription.

The payment period will be extended by 30 days. This means that people will be able to get their pay before they have to pay the phone bill.

Anyone who fails to pay the telephone bill on a single occasion will not get a stern letter from the sheriff. In an attempt to deal with customers in a better way the Telecommunications Agency will set up so-called local service councils on a trial basis in the Malmo, Kalmar and Sundsvall telephone areas.

Eliminate Monopoly

But these groups will not have any real power since they are intended to be purely advisory. The councils will act as consumer advocates and their members can be chosen from such organizations as LO [Swedish Federation of Trade Unions], TCO [Central Organization of Salaried Employees], LRF [National Federation of Swedish Farmers], KF [Swedish Cooperative Union], the Businessmen's Association and SHIO [Swedish Federation of Crafts and Small and Medium-sized Industries].

But all this has been done without consulting with the consumer ombudsman who does not think the measures go far enough.

The Telecommunications Agency proposes that the monopoly on telephone sets be eliminated as of 1 November 1985. The proposal is included in the supplement to the Telecommunications Agency's 3-year plan which will be submitted to the government.

It is doubtful that the government will take the same line as the Telecommunications Agency. It was apparent from the budget bill that Communications Minister Curt Bostrom did not think telephones should be turned loose.

"The monopoly is not working either for us or for our customers. The present limit seems increasingly unreasonable and unjustified," said Tony Hagstrom.

"But the agency's goal is to retain our responsibility for telephone service in the entire country. This is necessary for economic, social and regional policy reasons."

T Labels

Today there are cheap illegal telephones in many homes. But these will not be given the green light now.

"The illegal market should be replaced by a market where consumers have a choice of telephones but they must meet the necessary technical requirements."

Before "free" telephones are hooked up to the telephone network they must first be given a T label in the same way as electrical items must have an S label.

"We must have order in the telephone market now. Junk phones must be eliminated," said Tony Hagstrom.

In the past the Telecommunications Agency stubbornly insisted that subscribers did not buy their telephones but leased them. That way the agency did not have to pay the value-added tax. On this point too the agency has yielded. Telephones are the property of the subscribers and are subject to the value-added tax, the agency now says.

The Telecommunications Agency has been accused of abusing its monopoly position and preventing others from establishing themselves in the video text market.

The business freedom ombudsman has also been critical of the situation. The firms that have been affiliated with the Telecommunications Agency's Datavision have received only a call notice plus 30 ore per minute while others have to pay for long-distance service when they "call" from anywhere in the country.

Shift

Now the Telecommunications Agency has shifted and says that video text should be readily available to all users on equal terms. For the rest of the 1980's the agency will invest 300 million kronor in expanding the service.

In the future the Telecommunications Agency's Datavision will be only one among many data bases connected with the video text service. Video text is used when small computers communicate with data bases via the telephone network.

A new cooperative agreement has also been reached between Ericsson and the Telecommunications Agency. The old cooperation will be broadened within such areas as AXE, exchanges for large customers and equipment for the operation and maintenance of the telecommunications network.

When it comes to terminal equipment Ericsson and the Telecommunications Agency will continue to act independently of each other. Terminal equipment, including telephones and small subscriber switchboards, has been removed from the agreement.

The Telecommunications Agency will now turn over its 9.5 percent stock holdings in Ericsson Information System to Ericsson.

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SWEDEN

BRIEFS

ERICSSON FORMS NETWORK ENGINEERING COMPANY--L. M. Ericsson has formed a new company, Ericsson Network Engineering, Inc., through a merger of the planning and installation activity in the network area. The company will be part of the network construction business area which involves planning and building networks for general and industrial telecommunications and signal systems for railroads, streets and highways. Bjorn Linton will be head of the new company. [Text] [Stockholm DAGENS NYHETER in Swedish 15 Jan 85 p 9] 6578

TELECOMMUNICATIONS AGENCY BUDGET PROPOSAL--The investment in the maintenance and expansion of the highway network will continue in this year's budget. The Highway Agency will get 6.6 billion kronor, an increase of 352 million kronor. The Telecommunications Agency got the go-ahead for investments adding up to 20 billion kronor in the next 3-year period. Of this 12.5 billion will go for the telecommunications network, fiber optics and data communication. Accessibility of regular telephone conversations will be improved, picture transmission will be expanded and quality will be improved in all areas. These investments will make the Telecommunications Agency the biggest investor in the country. [By Erik Liden] [Excerpt] [Stockholm SVENSKA DAGBLADET in Swedish 11 Jan 85 p III] 6578

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